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TB/HIV among hill tribe marginalized vulnerable population, Thailand

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Background: Since 1982, Thailand had been reported 372,874 cases of HIV/AIDS, and 98,153 deaths. The north of Thailand has been report as the highest prevalence areas. There were almost 600,000 hill tribe populations live there as a marginalized and vulnerable people under lacked of access to health care and limited education. Most of them emigrated from China last 200 years ago. Chiang Rai Province is the most favorite living area of hill tribe people.

Methods: The retrospective cohort study design aimed to investigates the TB and HIV situation among hill tribe marginalized and vulnerable population. The systematic data collection with the completed questionnaire was conducted in the 12 hospitals, Chiang Rai Province. All questionnaires had been tested for reliability and validity before use. Survival and Cox's regression were analysis.

Results: Of 629 cases of TB reported during 2009-2011 form 12 hospitals were recruited into the study. 60.7% were male 23.8% aged 51-60 years old, and followed by 41-50 years old (20.2%) (min = 1, max = 93). Of 84.6%were pulmonary TB and extra pulmonary 15.4%, 44.6%recieving AFB testing, 77.4%new cases. The results of treatment found that 22.7% were cure, 28.6%complte, 4.3%defults, 8.1%death, and 1.9% failure. Prevalence of HIV/AIDS among hill tribe TB cases was 17.2%. Of 88.1% had treatment on CAT1, and 4.6%CAT2, and 2.3%CAT4. Male had greater pulmonary TB (p-vale = 0.044), and HIV+ than female (p-value = 0.023). Survival analysis found that being male (p-value = 0.01), non-HIV(p-value < 0.01), and CAT1 had greater success treatment. Cox's regression found that only aged 11-20 years old had related to success treatment (HR = 2.11, 95%CI = 1.05-4.26)

Conclusion: Active screening program and increasing the rights of access to care are immediate needed for hill tribe vulnerable people for coping TB problem in Thailand.

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Detection of multidrug resistant tuberculosis using Malachite Green Microtube assay and BACTEC 460 TB system

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Background: Colorimetric methods use liquid culture medium to cultivate mycobacteria and detect the growth by oxidation-reduction of an indicator dye by the metabolic by-products of the growing mycobacteria. Malachite Green Microtube (MGMT) assay is a colorimetric method that uses malachite green as the indicator dye for detection of growth of *M. tuberculosis*

Methods: The objectives of the study were to isolate *Mycobacterium tuberculosis* from suspected cases of Multidrug resistant tuberculosis (MDR-TB); to perform drug susceptibility testing (DST) by Radiometric BACTEC 460 TB system and MGMT assay and compare the results obtained by these methods.

Sputum samples were collected from 30 patients of pulmonary tuberculosis declared as treatment failure cases. Direct microscopy was done by Ziehl-Neelsen (ZN) staining. Culture and drug susceptibility testing (DST) was performed on BACTEC 460 TB system and by MGMT assay.

Results: Of the 30 samples, all 30 (100%) were positive on BACTEC TB system and 22 (73.3%) on MGMT assay. The positive predictive value of MGMT assay for detection of growth of *Mycobacterium tuberculosis* was 84.6% whereas the negative predictive value was 15.3%. The sensitivity and specificity of direct MGMT assay for drug susceptibility testing was 94.95% and 61.8%. The percentage of cases which came out to be multi-drug resistant (MDR-TB) by BACTEC TB system and MGMT assay were 56.7% and 68%, respectively. The sensitivity and specificity of direct MGMT drug susceptibility testing to determine Multidrug resistant tuberculosis (MDR-TB) came out to be 92.8% and 62.5%, respectively with a the percentage agreement of 82%. The mean time taken for detection of growth of *M. tuberculosis* and DST by direct MGMT assay was 10.8 days.

Conclusion: Thus this study showed that the MGMT assay was a sensitive and specific method for detection and drug susceptibility testing of *M. tuberculosis.* The time of detection was comparable to the BACTEC 460 TB system

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